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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/685,867	10/14/2003	Horst Haussecker	INTEL1330-1(P14242X)	6650

7590 10/04/2005

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EXAMINER

LE, BRIAN Q

ART UNIT	PAPER NUMBER
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2623

DATE MAILED: 10/04/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/685,867

Applicant(s)

HAUSSECKER ET AL

Examiner

Brian Q. Le

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 August 2005.
2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-29 is/are pending in the application.
4a) Of the above claim(s) 3, 14-23, and 27 is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 1, 2, 4-13, 24-26, 28 and 29 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

Response to Amendment and Arguments

1. Applicant's amendment filed June 14, 2002, has been entered and made of record.
2. Rejection of claim 13 under 35 U.S.C 112, first paragraph is withdrawn.
3. Rejection of claims 1-13 and 24-29 under 35 U.S.C 101, Double Patenting is withdrawn.
4. Applicant's arguments with regard to claims 1-2, 4-5, 7, 10, 13 and 24 have been fully considered, but are not considered persuasive because of the following reasons:

Regarding claim 1, the Applicant argues (bottom of page 7 and top of page 8) that Kley Reference does not disclose the concept of "aligning an object on a surface by molecular combing". The Examiner respectfully disagrees. Kley teaches this concept at column 16, lines 50-60 where object is positioning on the x,y plane (aligning object) on a surface (diamond coated surface) (column 16, lines 15-20) by molecular combing (column 17). The Applicant is advised to consider this reference carefully. Similarly, the Applicant argues that Kley does not teach a surface for attachment. Again, column 16, lines 15-20, clearly teaches this (diamond coated surface).

Thus, the rejections of all of the claims are maintained.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

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6. Claims 1-2, 4-7, and 12-13, 24-26 and 28-29 and are rejected under 35 U.S.C. 102(b) as being anticipated by Kley U.S. Patent No. 6,396,054.

Regarding claim 1, Kley teaches a method comprising:

a) alignment an object on a surface by molecular combing (column 16, lines 50-60 where object is positioning on the x,y plane (aligning object) on a surface (diamond coated surface) (column 16, lines 15-20) by molecular combing (column 17));

b) imaging the object by at least two different modalities (different modes) of scanning probe microscopy (SPM) (column 2, lines 24-28) to obtain data for one or more properties of the object (metric measurements) (column 2, lines 50-51);

c) analyzing the data using a model-based analysis using one or more models of physical structures of known objects (topography) (column 4, lines 63-67);

c) estimating the values of one or more parameters from the data analysis (AFM and STM measurements) (column 10, lines 15-16); and

d) fusing the estimated parameters to form a parameter-based characterization of the object (column 19, lines 20-50).

For claim 2, Kley teaches the method of claim 1, wherein parameter fusion is based on the model of the physical structure of the object (gathering data/producing data) (column 19, lines 20-50).

Regarding claim 4, Kley also teaches the method further comprising identifying the object (structure identification) (column 19, lines 14-17).

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For claim 5, Kley discloses the method further comprising comparing the fused parameters with parameters determined from known subjects to identify an occurrence of a known object (topography)(column 4, lines 65-67).

Regarding claim 6, Kley (as discussed in claim 1) teaches the SPM imaging includes at least two modalities selected from the group consisting of scanning tunneling microscopy (STM) (column 2, lines 24-37).

For claim 7, Kley shows the method wherein the object is a biomolecule (semiconductor material) (column 13, lines 65-67 through column 14, line 1).

For claim 12, Kley also teaches the method further comprising known biomolecule structures to obtain ranges of parameters for each type of biomolecule (column 13, lines 60-67).

Regarding claim 13, Grand further teaches the method wherein the parameter ranges for known biomolecules are used in estimating the parameters (column 14, lines 25-32).

For claim 24, please refer back to claims 1 and 14 for teachings and explanations. In addition, Kley further teaches controller (FIG. 26, "controller", element 114) to control the operation of the scanning probe microscope, memory (FIG. 26, "memory", element 124) to include one or more characterizations of known structures, and a surface for attachment (column 16, lines 15-20).

For claim 25, please refer back claim 5 for the teachings and explanations.

Regarding claim 26, Kley discloses the system wherein the characterizations of known structures are used to analyze a set of SPM images (column 4, lines 63-67 through column 5, 5-16).

For claim 28, please refer back to claim 5 for the teachings and explanations.

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For claim 29, please refer to claim 1 for teachings and explanations. In addition, Kley further teaches step of analyzing images and reanalyzing the data (column 4, lines 63-67; column 7, lines 5-10; column 11, lines 60-67).

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 8-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Kley U.S. Patent No. 6,396,054 and Grand et al. "Epitaxial growth of copper phthalocyanine monolayers on Ag(111)", Surface Science, vol. 366, no. 3, 1 November 1996.

Regarding claim 8, Kley does not explicitly teach the method wherein the parameters are estimated by level set techniques, PDE (partial differential equation) techniques. Grand teaches the method wherein the parameters are estimated by level set techniques, PDE (partial differential equation) techniques (page 404, column 1, 3rd paragraph). Modifying Kley's method of utilizing scanning probe microscopy according to Grand would be able to use partial differential equation as an estimation tool in estimating parameters. This would improve processing and therefore, it would have been obvious to one of ordinary skill in the art to modify Kley according to Grand.

For claim 9, Grand also teaches a method further comprising embedding the techniques in a probabilistic estimation framework (Page 405, column 1, last 15 lines and page 406, column 1, 1st 15 lines).

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Regarding claim 10, Grand teaches the method further comprising classifying the subject by applying vector quantization, support vector machines (FIG. 7). Modifying Kley's method of utilizing scanning probe microscopy according to Grand would be able to further classify fused parameter. This would improve processing and therefore, it would have been obvious to one of ordinary skill in the art to modify Kley according to Grand.

Referring claim 11, Grand teaches the method further comprising using known biomolecule structures to generate training sets of data (page 405, 1st column, last 10 lines).

Double Patenting

9. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

10. Claims 1-2, 4-13, 24-26, and 28-29 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-29 of copending Application No. 10/273,312. Although the conflicting claims are not identical, they are not patentably distinct from each other because they still show similar concepts as the copending Application such as analyzing image or data using models of physical structure of the known object, estimating the values of one or more parameters, fusing the estimated parameters,

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identifying the object, comparing the fused parameters with parameters determined from known objects to identify an occurrence of a known object ... etc.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Conclusion

11. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

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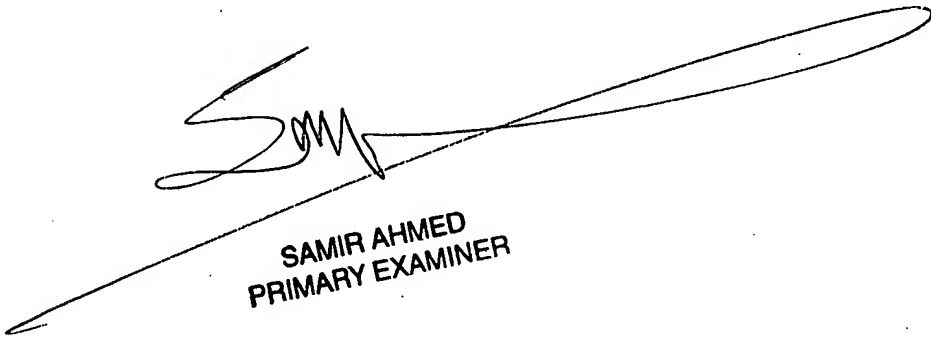
Contact Information

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brian Q Le whose telephone number is 571-272-7424. The examiner can normally be reached on 8:30 A.M - 5:30 P.M.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amelia Au can be reached on 571-272-7414. The fax phone numbers for the organization where this application or proceeding is assigned are 571-273-8300 for regular communications and 571-273-8300 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-3900.

BL
September 29, 2005



SAMIR AHMED
PRIMARY EXAMINER